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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KIM, YOON YOUNG

ART UNIT PAPER NUMBER

1723

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/748,365	Applicant(s) CHOI, KYUNG-JU	
	Examiner Yoon-Young Kim	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 1-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1203</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-35, drawn to a method of manufacturing a pleated fluid filter, classified in class 156, subclass 474.
 - II. Claims 36-58, drawn to a pleated fluid filter, classified in class 210, subclass 493.1.

2. The inventions are distinct, each from the other because:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by another and materially different process such as one that does not require scoring.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Steve Witters on November 22, 2005 a provisional election was made without traverse to prosecute the invention of a pleated fluid filter, claims 36-58. Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 1-35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 36-39 and 44-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Enbom, U.S. Patent No. 5,071,555:

Regarding Claim 36, Enbom discloses a pleated fluid filter arrangement comprising: at least one layer of fluid filter media (#1) pleated into a plurality of longitudinally extending adjacent opposed successive pleat flanks of selected depth and spacing between successive pleat flanks to provide spaced upstream and downstream filter face crests; the successive pleat flanks having minimal wave formation and being spaced by communicatively facing increments of spaced formed material increments (#31, 32) extending in selected lengths between the spaced upstream and downstream filter face crests.

Regarding Claim 37, Enbom discloses the increments of the spaced formed material increments being selected from a suitable fluid pliable adhesive (Col. 2, Lines 30-35).

Regarding Claim 38, Enbom discloses the communicatively facing increments of the spaced formed material increments being of selected thickness so that the distance between adjacent successive pleat planks and between the spaced upstream and downstream filter face crests is substantially equal (Fig. 2).

Regarding Claim 39, Enbom discloses the adjacent successive pleat flanks being of a substantially uniform level geometric configuration (Fig. 2).

Regarding Claim 44, Enbom discloses the communicatively facing formed material increments being in increment first and second sets with at least selected increments of at least one set overlapping with respect to selected pleat crests of the other set (Fig. 4).

Regarding Claim 45, Enbom discloses the communicatively facing formed material increments being in formed material increment first and second sets with at least selected formed material increments of one set differing in length from at least one of the lengths of other formed material increments in the sets (Fig. 3).

6. Claims 36-39, 43, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Lippold, U.S. Patent No. 5,290,447:

Regarding Claim 36, Lippold discloses a pleated fluid filter arrangement comprising: at least one layer of fluid filter media pleated into a plurality of longitudinally extending adjacent opposed successive pleat flanks (#15-22) of selected depth and spacing between successive pleat flanks to provide spaced upstream and downstream filter face crests; the successive pleat flanks having minimal wave formation and being spaced by communicatively facing increments of spaced formed material increments (#30) extending in selected lengths between the spaced upstream and downstream filter face crests.

Regarding Claim 37, Lippold discloses the increments of the spaced formed material increments being selected from a suitable fluid pliable adhesive (#38).

Regarding Claim 38, Lippold discloses the communicatively facing increments of the spaced formed material increments being of selected thickness so that the distance between

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adjacent successive pleat planks and between the spaced upstream and downstream filter face crests is substantially equal (Fig. 4).

Regarding Claim 39, Lippold discloses the adjacent successive pleat flanks being of a substantially uniform level geometric configuration (Fig. 1).

Regarding Claim 43, Lippold discloses that the communicatively facing increments being in the form of substantially similar length increment first and second sets with at least one of the sets having a substantially uniform cross-section with at least one certain select increment of the other set being of differing cross-section wherein at least one certain pair of communicatively facing increment is tapered to provide tapered spacing and a overall geometric configuration conducive to a select geometric configuration (Fig. 3).

Regarding Claim 46, Lippold discloses that the communicatively facing formed material increments being in formed material increment first and second sets with at least one of the selected formed material increments of one set differing in cross-sectional breadth from a cross-sectional breadth of at least one of the other formed material increment of the other set (Fig. 1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 47 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Enbom.

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Regarding Claim 47, Enbom does not disclose the communicatively facing formed material increments being pressure displaced increments. Determination of patentability in "product by process" claims is based on product itself. In re Thorpe, 227 USDQ 964 (1985). The increment formation process of Enbom is deemed to be a structure alternative to the pressure displacement process.

9. Claim 47 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Lippold.

Regarding Claim 47, Lippold does not disclose the communicatively facing formed material increments being pressure displaced increments. Determination of patentability in "product by process" claims is based on product itself. In re Thorpe, 227 USDQ 964 (1985). The increment formation process of Enbom is deemed to be a structure alternative to the pressure displacement process.

10. Claims 40-42, 48, 50-52, and 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enbom in view of Cusick et al., U.S. Patent No. 5,993,501.

Regarding Claim 40, Enbom discloses a support layer (#6) but does not disclose the material of the filter media. Cusick teaches a pleated fluid filter comprising at least one layer of selected scrim material (#24, 26) serving as a support layer and a selected fine synthetic (Col. 2, Lines 48-60) filter media material (#22) applied to the selected scrim material. It would have been obvious to one of ordinary skill in the art to modify Enbom with the element of Cusick because they are both pleated fluid filters and because synthetic materials are common in the filter art.

Regarding Claim 41, Cusick discloses that the scrim material is in the range of approximately forty to two hundred grams per square meter in basic weight (Col. 8, Lines 7-18) but does not disclose the fiber size, or stiffness of the scrim material. One of skill in the art would by routine experimentation find the optimum fiber size, and stiffness. It would have been obvious to one of skill in the art to make the fiber size, and stiffness of the scrim of Enbom in view of Cusick as so desired or required, including as claimed to optimize filtration.

Regarding Claim 42, Cusick discloses that the scrim material includes with a selected hot melt spray (Col. 5, Lines 20-24) of adhesive amorphous material (Col. 6, Lines 28-52) and the filter media material is of a relatively estimated selected weight, fiber, thickness and porosity (Col. 5, Lines 12-20) when applied to the hot melt spray coating.

Regarding Claim 48, Cusick discloses that at least one layer of filter media is of synthetic fibrous material (Col. 2, Lines 48-60).

Regarding Claim 50, Cusick discloses that at least one selected scrim layer has been fed to a forming zone as a downstream support layer and a selected fine synthetic filter media material has been applied thereto (Col. 11, Lines 45-52).

Regarding Claim 51, Cusick discloses that downstream support layer includes synthetic material (Col. 7, Line 54 – Col. 8, Line 18).

Regarding Claim 52, Cusick discloses that the downstream support layer is of wet-laid material (Col. 8, Lines 7-13).

Regarding Claim 54, Enbom in view of Cusick does not disclose that the downstream support layer is of dri-laid material. Determination of patentability in "product by process" claims is based on product itself. In re Thorpe, 227 USDQ 964 (1985). The support layer forming method of Enbom in view of Cusick is deemed to be a structure alternative to the dri-laid process.

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Regarding Claim 55, Cusick discloses that the downstream support layer is of spunbond material (Col. 8, Lines 7-13).

Regarding Claim 56, Cusick discloses that the selected fine synthetic filter media is of meltblown material (Col. 6, Lines 5-9).

11. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Enbom in view of Cusick as applied to Claim 48 above, and further in view of Niccum et al., U.S. Patent No. 3,849,314.

Regarding Claim 49, Enbom in view of Cusick does not disclose that the filter media is of cellulose material. Niccum teaches a pleated fluid filter comprising a cellulose filter media (Col. 2, Lines 53-56). It would have been obvious to one of ordinary skill in the art to modify Enbom in view of Cusick with the element of Niccum because it is a material of manufacture common in the filter art.

12. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Enbom in view of Cusick as applied to Claim 50 above, and further in view of Osendorf, U.S. Patent No. 5,427,597.

Regarding Claim 53, Enbom in view of Cusick does not disclose that the downstream support layer is of cellulose material. Osendorf teaches a pleated fluid filter comprising a cellulose support layer (Col. 3, Lines 1-3). It would have been obvious to one of ordinary skill in the art to modify Enbom in view of Cusick with the element of Osendorf because it is a material of manufacture common in the filter art.

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13. Claims 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enbom in view of Cusick as applied to Claim 56 above, and further in view of Kenigsberg et al., U.S. Patent No. 5,156,780.

Regarding Claims 57-58, Enbom in view of Cusick does not disclose an additive being added to the filter media. Kenigsberg teaches a process for adding a fluoro chemical to a porous media (Col. 4, Lines 33-38). It would have been obvious to one of ordinary skill in the art to modify Enbom with the element of Kenigsberg in order to achieve permanent water and oil repellency while maintaining the porosity of the filter (Col. 3, Lines 52-54).

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yoon-Young Kim whose telephone number is (571) 272-2240. The examiner can normally be reached on 8:30-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YK
12/12/05


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